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# The Economic Impact of Aurora Health Care in Wisconsin

Marc V. Levine

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# ***The Economic Impact of Aurora Health Care in Wisconsin***

A report prepared for Aurora Health Care

By

The University of Wisconsin-Milwaukee  
Center for Economic Development  
June 2013

## **ABOUT THIS REPORT**

This study was prepared for Aurora Health Care by the University of Wisconsin-Milwaukee Center for Economic Development (UWMCED). The author of the study is Dr. Marc V. Levine, Professor of History, Economic Development, and Urban Studies at UWM and the founding director of the Center. Rebecca Nole and Phil Mack, project assistants at UWMCED, provided indispensable research assistance.

UWMCED is a unit of the College of Letters and Science at the University of Wisconsin-Milwaukee. The College established UWMCED in 1990, to provide university research and technical assistance in support of efforts to improve the Greater Milwaukee economy. The analysis and conclusions presented in this study are solely those of the author and do not necessarily reflect the views and opinions of the University of Wisconsin-Milwaukee, or any of the organizations providing financial support to the Center. No one but the author, of course, is responsible for the content of this report or any errors in the analysis.

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## EXECUTIVE SUMMARY

This study examines the economic impact of the Aurora Health Care system in the state of Wisconsin, as well as in the main counties or metropolitan areas in which Aurora maintains hospitals, clinics, and other ambulatory facilities.

Aurora is the largest private-sector employer in Wisconsin, employing 30,210 people directly; and when the ripple effects of Aurora's purchasing and the spending by its employees are taken into account, Aurora generates over 61,000 jobs in the state. An estimated \$8.2 billion of economic activity in Wisconsin is attributable to Aurora's operations, as are \$3.1 billion in earnings.

All told, when all multiplier effects are calculated, Aurora's economic impact accounts for 2.6 percent of all employment and 3.3 percent of total payroll in the state of Wisconsin.

Two-thirds of Aurora's economic impact is felt in the four-county metro Milwaukee region, with over 41,000 jobs in the region directly or indirectly attributable to Aurora's operations. Aurora is an especially important economic institution in the city of Milwaukee, where it directly provides almost 10,000 jobs. Aurora is also almost certainly the largest employer of minorities in Milwaukee and in the state of Wisconsin. When all multiplier effects are calculated, Aurora's economic impact accounts for an estimated 5.5 percent of all employment and 6.3 percent of total payroll in metro Milwaukee.

Aurora's economic impact is substantial in every county in which it operates. In seven counties in the eastern Wisconsin Aurora "footprint," Aurora's impact generates over 5 percent of county-wide payroll, and in five counties, Aurora's impact accounts for over 4 percent of county-wide employment. Aurora's hospitals, in particular, generate significant impacts in their host counties: nine of the 15 hospitals in the Aurora system generate a total employment impact of more than 1,000 jobs in their respective counties or metropolitan areas, while four others account for more than 750 jobs each.

### The Economic Impact of Aurora Health Care in Selected Regions

	<b>Milwaukee Co.</b>	<b>Metro Milwaukee</b>	<b>State of Wisconsin</b>
Revenues/Output	\$3,593.37 million	\$5,354.03 million	\$8,224.88 million
Earnings	\$1,553.90 million	\$2,200.47 million	\$3,126.06 million
Employment	28,044	41,162	61,604

**Aurora's Impacts as a Share of Total Employment  
and Payroll in "Footprint" Counties: 2011**

<b>County</b>	<b>Employment Share %</b>	<b>Payroll Share %</b>
Brown	2.9	3.2
Fond du Lac	0.7	1.0
Kenosha	4.5	5.8
Manitowoc	3.8	5.0
Marinette	1.7	3.2
Milwaukee	6.3	7.3
Ozaukee	6.0	6.2
Racine	3.1	3.5
Sheboygan	5.3	7.4
Walworth	4.9	5.7
Washington	3.9	5.2
Waukesha	1.9	2.3
Winnebago	2.2	2.3
Metro Milwaukee	5.5	6.3
State of Wisconsin	2.6	3.3

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## Section I:

### Introduction and Economic Context

#### Purpose of this Study

Aurora Health Care is a not-for-profit health care provider, headquartered in Milwaukee and serving eastern Wisconsin. The Aurora system includes 15 hospitals, 172 clinics, and more than 70 pharmacies.<sup>1</sup> Aurora employs over 30,000 persons, making it the largest private-sector employer in Wisconsin, and, with annual expenditures over \$4 billion, it is a major economic force in the state of Wisconsin as well as in the individual counties in which it operates.

**Figure 1:**

#### The Aurora Health Care Footprint



This study analyzes the economic impact of Aurora Health Care in the state of Wisconsin, as well as in the main counties or metropolitan areas in which Aurora maintains hospitals and ambulatory facilities. Health care services affect local economies in myriad ways. These include: a) improving the health of families and thereby enhancing the productivity of the workforce; b) directly providing jobs to local residents and indirectly generating employment and business growth through purchases from local vendors; c) generating knowledge and innovation; d) developing real estate and anchoring communities; and e) by providing “community benefits” to help compensate for market inefficiencies, especially in low-income communities.

Using the standard methods of economic impact analysis (described below), this study quantifies the economic impact of Aurora on employment, earnings, and business sales/output in Wisconsin, metropolitan Milwaukee, and 14 individual counties in eastern Wisconsin in which Aurora operates hospitals, clinics and other medical offices and facilities. This report measures not only the direct impact of Aurora’s facilities on local economies but also the substantial indirect, ripple effects of Aurora’s operations on employment, earnings, and business sales throughout Wisconsin and individual county economies.<sup>2</sup> Finally, although not fully captured by quantitative measures, the report also identifies the “community benefits” contributions of Aurora Health Care as an anchor institution in Wisconsin communities.

## **Health Care Institutions as State and Local Economic Engines**

Hospitals and medical facilities are increasingly recognized as central institutions in state and local economies across the United States.<sup>3</sup> Several studies have documented the degree to which health care facilities constitute a growing source of employment, earnings, and aggregate economic activity, in both rural areas and, increasingly, urban settings.<sup>4</sup> Hospitals, for example, are now routinely among the largest employers in many cities and regions, providing an increasingly important share of both high pay-high skill jobs, as well as entry-level and middle-skill jobs accessible to low-income workers with modest credentials.<sup>5</sup> Moreover, economists now widely recognize that in some regions health care institutions function as “export” industries, bringing outside dollars into the region for health care services and research. Indeed, several cities, such as Boston, Cleveland, Pittsburgh, and Minneapolis, have been dubbed by analysts as “health poles” where the concentration of health care facilities functions as an engine of metropolitan economic development in a manner similar to high technology driving economic growth in so-called “tech poles.”<sup>6</sup> In these “health poles,” anchored by such renowned institutions as the Cleveland Clinic, the University of Pittsburgh Medical Center, Johns Hopkins University Hospital (Baltimore), or the M.D. Anderson Cancer Center (Houston), hospitals and ambulatory facilities typically generate between 9-15 percent of the region’s employment and payroll.

As Table 1 shows, the health care institution “share” of the metro economy in Milwaukee is comparable to the share in some of the nation’s most noted “health

poles.” The burgeoning health care sector is increasingly a cornerstone of Milwaukee’s economy -- *and, as we will see in this study, Aurora Health Care is central to Milwaukee’s health care sector, as well as to the economies of all the counties in which Aurora operates and, indeed, the state of Wisconsin as a whole.*

**Table 1:**  
**The Economic Weight of Hospitals and Ambulatory Facilities in**  
**Selected U.S. Metropolitan “Health Poles”**

(health care facility % of total regional employment and payroll, 2011)

Metropolitan Area	Hospital/Ambulatory % of total metro employment	Hospital/Ambulatory % of total metro payroll
Baltimore	11.46	13.93
Boston	11.75	12.18
Chicago	10.00	10.22
Cleveland	13.47	16.79
Houston	9.92	9.14
Milwaukee	10.29	12.10
Minneapolis	9.60	10.32
Philadelphia	11.51	12.44
Pittsburgh	11.63	12.80
Seattle	9.13	9.76

Source: U.S. Bureau of the Census, *County Business Patterns*

### **Aurora Health Care as an Economic Institution: An Overview**

As Table 2 confirms, with over 30,000 employees, Aurora Health Care is the largest single employer in the state of Wisconsin. Over the past twenty years, Aurora’s employment growth has been constant and substantial, increasing by six-fold since 1989 (from 5,400 to 30,210). Health care institutions, in general, have become a central component of state and local employment bases in Wisconsin, and as Table 3 shows, by a very wide margin, Aurora is the leading health care employer in the state of Wisconsin (including not only health care service providers, but other businesses in the health care sector such as pharmaceutical companies and medical equipment manufacturers).

Not only is Aurora the largest employer in Wisconsin, but it is a major employer in the individual counties in which Aurora operates its main hospitals, clinics, and other ambulatory facilities. Tables 4-6, for example, show how Aurora’s growth in the Milwaukee metropolitan area over the past twenty years has catapulted it into a clear position as the region’s largest employer. The centrality of Aurora as a local employer in metro Milwaukee has accelerated in recent years: between 2005-2011, for example, while total employment in Milwaukee *fell* by 4.5 percent, Aurora’s

**Table 2:  
Largest Employers in Wisconsin**

<b>Company</b>	<b>Number of Local Employees</b>
Aurora Health Care	30,210
Wal-Mart	27,843
University of Wisconsin-Madison	15,556
Wheaton Franciscan Health Care	11,638
Wisconsin Department of Corrections	10,577
U.S. Postal Service	10,317
Menards	10,000
Roundy's	8,700
Froedtert Health Care	8,600
Kohl's	8,400

Source: State of Wisconsin, WORKnet, UWMCED

**Table 3:  
Leading Health Care Employers in Wisconsin**

<b>Company</b>	<b>Number of Local Employees</b>
Aurora Health Care	30,210
Wheaton Franciscan Services Inc.	11,638
Froedtert Health Care	8,600
Marshfield Clinic	8,000
UW Health	7,615
GE HealthCare	6,400
Medical College of Wisconsin	5,400
ProHealth Care	4,972

Source: State of Wisconsin, WORKnet; UWMCED

regional employment *increased* by 20 percent (from 16,500 to 20,000). While economic growth was stagnant in the region, Aurora's expenditures increased by over 27 percent (in inflation-adjusted dollars) between 2005-2011. Aurora is an especially important employer in the city of Milwaukee, which has suffered from a declining employment base for over 20 years. With almost 10,000 jobs at Aurora facilities located in the city of Milwaukee, Aurora is the city's largest employer (including both the private-sector and government). Thus, in an era of stagnant employment growth and even decline in the wake of the Great Recession for metro Milwaukee, Aurora has continued to generate jobs and grow as a cornerstone of the state and local labor markets.

**Table 4:**  
**Leading Private Employers in Metro Milwaukee: 1989**

<b>Company</b>	<b>Number of Local Employees</b>
Briggs and Stratton	8,000
Wheaton Franciscan Services Inc.	6,471
Aurora Health Care	5,400
Wisconsin Bell	4,527
Allen Bradley	4,500
GE Medical	4,000
A.O. Smith	3,986
Quad Graphics	3,972
GM-Delco	3,600
Firststar	3,575

*Source: Business Journal of Milwaukee, Book of Lists*

**Table 5:**  
**Leading Private Employers in Metro Milwaukee: 2000**

<b>Company</b>	<b>Number of Local Employees</b>
Aurora Health Care	13,725
Covenant health Care	9,500
Quad Graphics	9,000
M&I Corporation	6,500
Ameritech	6,300
GE Medical	5,000
Rockwell International	4,550
Kohl's Corporation	3,925
Northwestern Mutual Life Insurance Company	3,893
Wisconsin Energy	3,749

*Source: Business Journal of Milwaukee, Book of Lists*

**Table 6:**  
**Leading Private Employers in Metro Milwaukee: 2011**

<b>Company</b>	<b>Number of Local Employees</b>
Aurora Health Care	19,779
Wheaton Franciscan Services Inc.	10,914
Roundy's	8,700
Froedtert Health Care	8,600
Kohl's Corporation	8,400
Quad Graphics	6,900
GE HealthCare	6,400
Medical College of Wisconsin	5,400
Northwestern Mutual Life Insurance Company	5,000
ProHealth Care	4,972

Source: *Business Journal of Milwaukee, Book of Lists*; UWMCED

As Table 7 reveals, in the 14 counties in which it operates major facilities, Aurora is among the leading employers in virtually all of them. Aurora's combined operations rank among the top four employers in Kenosha, Manitowoc, Milwaukee, Ozaukee, Racine, Sheboygan, and Walworth counties, and among the top ten in Brown and Winnebago counties. Moreover, these figures do not take into account the additional employment generated in these counties through the ripple effects of Aurora's operations on other businesses; as we examine below, when these impacts are calculated, in several counties Aurora's operations are directly and indirectly responsible for 5-6 percent of the local employment base, a quite substantial number for a single employer.

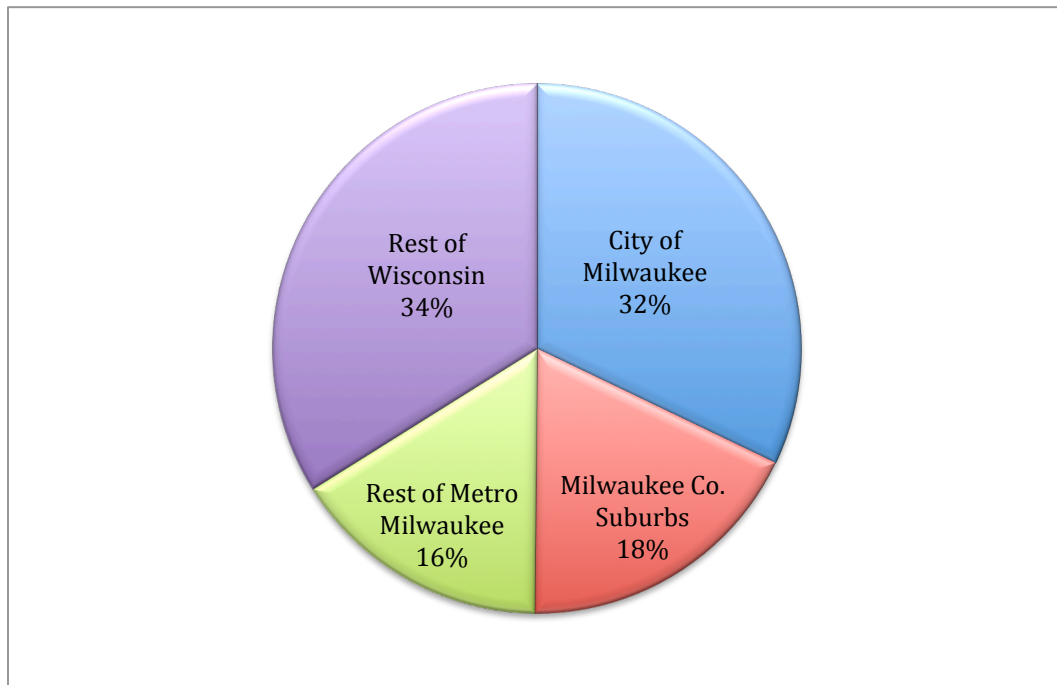
**Table 7:**  
**Aurora's Rank as a Private-Sector Employer in Wisconsin Counties**

<b>County</b>	<b>Aurora Employment</b>	<b>Rank in County</b>
Brown	2,251	6
Door	78	20
Fond du Lac	176	25
Kenosha	1,330	3
Manitowoc	810	2
Marinette	201	15
Milwaukee	14,957	1
Ozaukee	1,327	4
Racine	1,366	4
Sheboygan	1,728	3
Walworth	1,049	4
Washington	1,139	5
Waukesha	2,356	17
Winnebago	1,335	8
City of Milwaukee	9,664	1

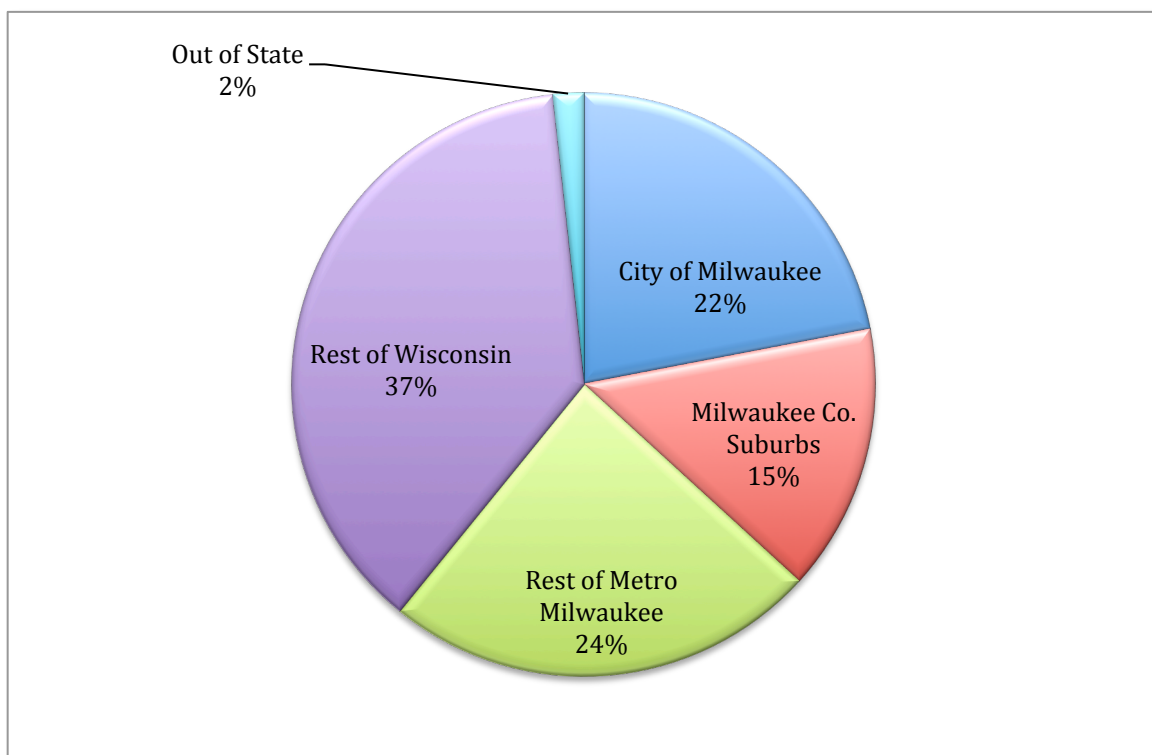
Source: Data from Aurora Health Care and State of Wisconsin WORKnet

Figures 2 and 3 array the geographical distribution of Aurora employment in Wisconsin. Although, as we have seen, Aurora is a major jobs-generator in counties throughout its “footprint,” around two-thirds of the jobs generated by Aurora are located in metro Milwaukee – around one-third in the city of Milwaukee itself (an important stabilizer for the city’s jobs base). Approximately 61 percent of Aurora’s employees live in metro Milwaukee. Fewer Aurora employees live in the city of Milwaukee (around 6,600) than work there (almost 10,000). This means, of course, that Aurora facilities in the city of Milwaukee provide a substantial number of jobs for commuting residents in the suburban counties of the metropolitan area. In Waukesha County, for example, there are 2,356 jobs in Aurora facilities, but 4,437 Aurora employees live in the county, meaning that Aurora facilities in other jurisdictions –mainly, the city of Milwaukee—provide an additional 2,000 jobs for Waukesha County residents.

**Figure 2:  
Where Aurora Employees Work**



**Figure 3:  
Where Aurora Employees Live**



Another notable dimension of Aurora as an economic institution is its role as an employer of minorities in Wisconsin. Numerous economists have noted that hospitals and medical facilities are an increasingly important and accessible source of employment –with career-ladders and tracks for upward mobility-- for job-seekers from historically disadvantaged minority communities.<sup>7</sup> This is a particularly salient issue in metropolitan Milwaukee, which consistently registers the largest employment disparities by race and among the lowest rates of African American employment of any metropolitan area in the country.

As Table 8 reveals, Aurora Health Care is almost certainly the largest single employer of minorities in metro Milwaukee and the state of Wisconsin.<sup>8</sup> Minorities represent 12.2 percent of Aurora’s total employment; African-Americans alone represent 6.5 percent of Aurora’s employment. (Blacks represent 10 percent of Aurora’s employment in metro Milwaukee and around 20 percent of Aurora’s employment in the city of Milwaukee). Over 70 percent of Aurora’s black and Hispanic employees worked full-time; by contrast, according to U.S. census data, only 32 percent of working-age blacks and only 42 percent of working-age Hispanics in Wisconsin held full-time, full-year jobs in 2011. Thus, it would appear that Aurora is not only an important employer of historically-excluded minorities in Wisconsin, but that it also provides a significantly higher proportion of full-time jobs to minorities than is generally the case in the Wisconsin (and Milwaukee) labor markets.



**Table 8:  
Minorities Working at Selected Wisconsin Employers**

Employer	Black	Hispanic	Asian	Native-Am	Total Minority
Aurora Health Care	1,959	961	672	91	3,683
City of Milwaukee	1,904	598	98	83	2,683
Milwaukee Public Schools	1,543	182	583	67	2,375

Sources: Aurora Health Care, City of Milwaukee, MPS

Beyond its role as an employer, Aurora is major purchaser of supplies, equipment, and services, as it operates and maintains existing facilities and, at various junctures, builds new ones. In 2011, as Table 9 illustrates, Aurora spent over \$1.6 billion on supplies, capital and equipment, and maintenance, rental insurance, utilities, and other business expenses. To the extent that these expenditures involve purchases from local vendors, they represent an infusion of funds into the local economy and revenues to local businesses.

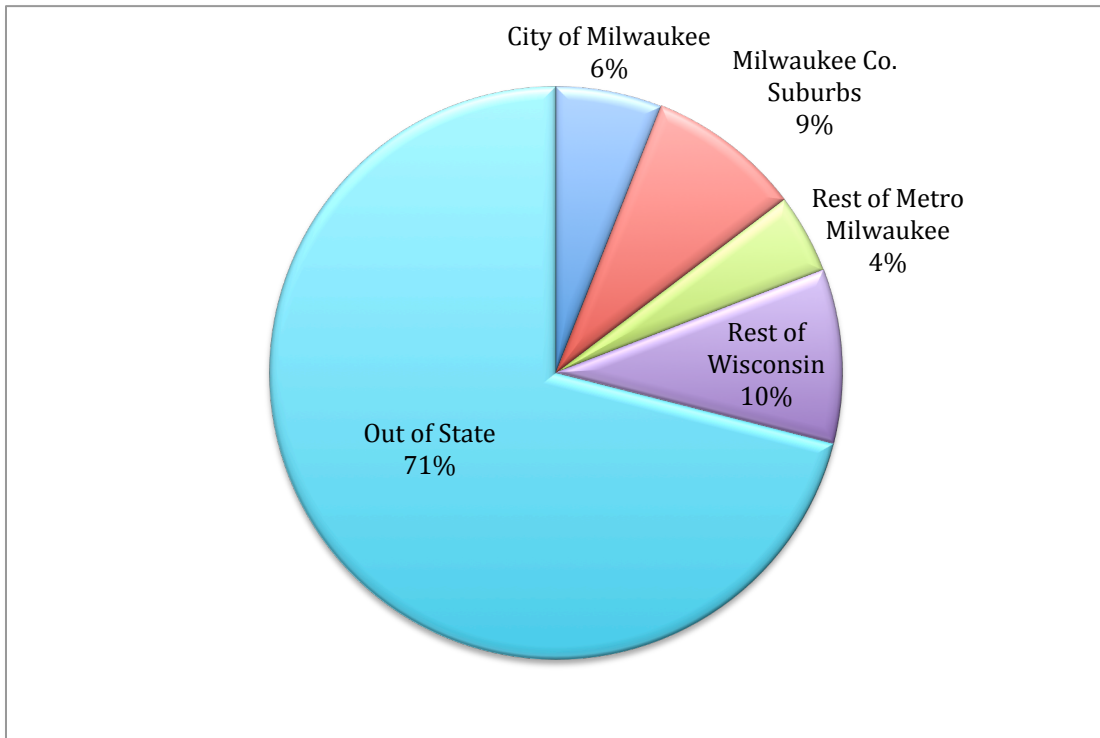
**Table 9:  
Aurora Expenditures By Category: 2011**

Salaries, fees and fringe benefits	\$2330.88 million
Supplies	\$800.83 million
Net building, equipment and working capital	\$169.05 million
Maintenance, rental, insurance, utilities and other business expenses	\$653.47 million
Other payments	\$141.49 million
Total	\$4095.72 million

Source: Aurora at a Glance: 2011 Annual Report

Figure 4 displays the geographic location of Aurora purchasing. The majority of Aurora's purchasing is from outside Wisconsin, an unsurprising finding given the national and international nature of the markets for medical supplies and equipment (such as pharmaceuticals, scanners, and so forth). Approximately 29 percent of Aurora's purchases, however, are from local vendors, injecting \$520 million or so annually into the Wisconsin economy; two-thirds of these in-state procurement dollars are spent annually in metro Milwaukee (around \$340 million). As we analyze shortly, those supplier expenditures, through multiplier effects, ripple through the state and local economies, creating additional business sales, employment, and earnings.

**Figure 4:**  
**Share of Aurora Procurement Expenditures, By Vendor Location**



## Section II:

### Calculating the Economic Impact of Aurora Health Care: The Methodology

How do we quantify the full economic impact of a health care provider such as Aurora Health Care? The economic impact of the operation of hospitals, clinics, and other ambulatory facilities needs to be gauged from a number of angles. First, purchases of goods and services by these entities have a *direct* economic effect on a community. Aurora's hospitals and ambulatory facilities spend millions of dollars annually on items running the gamut from medical and surgical supplies, to laboratory equipment, to housekeeping and building maintenance, to local newspaper or magazine subscriptions for waiting rooms. To the extent that these purchases are made from local vendors, they represent an "economic impact" on area businesses, which will be reflected in employment, earnings, and sales at those enterprises. To the extent that, in turn, these local vendors purchase *their* supplies or production components from other local firms, there is a further, *indirect* impact of Aurora's initial expenditures. For example, if Aurora purchases a CT scanner from Waukesha-based GE Healthcare (as opposed to, say, Siemens), there will be more substantial local economic impacts as, for example, GE then purchases helium from locally based Praxair and additional components from local manufacturers, and then, in turn, these firms purchase some of *their* "inputs" from other local firms, and so forth. These inter-industry linkages are a crucial factor in determining total economic impacts.

Second, as we have noted, Aurora's hospitals and ambulatory facilities employ large numbers of local residents (including employees who may relocate to an area explicitly because of job opportunities at Aurora). The salaries and wages paid to these employees, in turn, are spent on food, housing, and other consumer items, and to the extent that these items can be purchased locally, there is an additional *induced* impact of Aurora's operations, especially in sectors such as retail trade, food and drinking establishments, and the housing market (but also in some goods producing sectors as well).

Finally, to the extent Aurora's facilities –hospitals, in particular—attract patients or research funding from outside Wisconsin, this injection of "outside dollars" functions similarly to businesses earning "export income" when their products or services are sold in national and international markets. Such export income is an important driver of local economic development.

The way economists make these "total economic impact" calculations is with something called an input/output (I-O) model. Briefly, an I-O model identifies how all sectors of an economy are related: how employment and output in one sector are linked to other sectors of the economy. The model includes three elements:

*Direct effects*, which represent the employment and output created directly by Aurora’s expenditures, in the purchases it makes from local vendors, or the salaries it pays its local employees;

*Indirect effects*, which occur as local producers or service providers satisfy the direct demands for goods and services required by the hospital, by making purchases from other local suppliers;

*Induced effects*, which occur as workers –employed either directly by Aurora or by firms whose business is stimulated by Aurora’s expenditures—spend their wages on locally provided goods and services.

The I-O model, which measures the linkages between all industries in the local economy as well as patterns of consumer spending, enables us to aggregate all of these rounds of expenditures into a measure of the final impact of Aurora’s initial expenditures on total output/business sales, employment, and earnings. The measure of the extent to which an initial direct expenditure (i.e. the operating budget of a hospital) produces additional rounds of spending, employment, and output is called a *multiplier effect*. The magnitude of the multiplier effect on a local economy is contingent on how much “leakage” occurs from the initial expenditure: that is, how much in the way of goods and services a local business needs to purchase from outside the region, or how much local workers spend their wages on goods and services “imported” from outside the region.

Thus, for example, in our I-O model, the RIMS II model developed by the U.S. Department Commerce, Bureau of Economic Analysis, the employment multiplier for hospitals in metro Milwaukee is 2.08, meaning that for every 100 jobs created at an Aurora hospital in metro Milwaukee, an estimated additional 108 jobs are created through indirect and induced effects, for a total impact of 208 jobs. By contrast, the hospital multiplier for Manitowoc County is 1.41; this means, that for every 100 jobs at an Aurora hospital in Manitowoc, an estimated additional 41 jobs are created through indirect and induced effects, for a total impact of 141 jobs. This makes sense: metro Milwaukee’s economy is much larger and more diversified than Manitowoc County’s, with denser inter-industry linkages and more extensive local consumer markets. Therefore it is much likelier that Aurora’s initial spending –and the next round of spending by its suppliers and employees—would “re-circulate” more (and “leak” less) in metro Milwaukee than in Manitowoc County, and thus produce a higher multiplier effect and overall economic impact.<sup>9</sup>

For this study, we have used I-O models for a number of jurisdictions: the entire state of Wisconsin; the four-county metro Milwaukee area; and 14 individual counties in the Aurora footprint. This will enable us to provide a more comprehensive analysis of the economic impact of Aurora’s operations, not only at the state and metro-area level, but for individual counties as well. For each county, we provide not only a measure of the total economic impact of Aurora’s operations (all facilities), but a separate breakout on the impact of Aurora’s hospitals in that jurisdiction.

### Section III:

#### The Economic Impact of Aurora's Operations: The Results

Tables 10-13 summarize the total economic impact of Aurora's operations in the two largest regions analyzed: the entire state of Wisconsin and the four-county Milwaukee metropolitan area (which accounts for around two-thirds of Aurora's direct spending in the state as well as approximately 70 percent of Aurora's payroll and 66 percent of Aurora's employment). As Table 10 reveals, when all the indirect and induced effects of Aurora's hospital and ambulatory facilities are calculated, Aurora generates a total impact of \$8.2 billion on the Wisconsin economy, including a total impact on earnings in the state of \$3.1 billion, and a total employment impact of 61,604 jobs. In Greater Milwaukee, Aurora's total impact on output/sales in the region is almost \$5.4 billion, including \$2.2 billion on earnings, and a total impact of 41,162 jobs.

Tables 12 and 13 break down the sectors in which those impacts occur in Wisconsin and metro Milwaukee. Although, predictably, the lion's share of Aurora's impact is in the health care and social assistance sector of the Wisconsin economy, Aurora's operations generate, for example over 4,000 jobs in retail trade in Wisconsin (2,401 in metro Milwaukee), and over \$551 million of manufacturing output in the state (over \$323 million in metro Milwaukee). As both Wisconsin and metro Milwaukee are large economies with diversified industrial mixes, the sectoral impacts of Aurora's operations are fairly wide – more extensive than in some of the less diversified counties we analyze later.

These Aurora impacts are substantial. ***When all indirect and induced effects are calculated, Aurora's impact accounts for 2.6 percent of all employment in Wisconsin and 3.3 percent of total payroll in the state; in metro Milwaukee, Aurora's impact represents an even more imposing 5.5 percent of all employment and 6.3 percent of total payroll in the region*** (see Table 17).

**Table 10:**  
**Economic Impact of Aurora Expenditures: State of Wisconsin**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: State of Wisconsin</b>
Revenues/Output	\$4,095.7 million	\$4,129.2 million	\$8,224.9 million
Earnings	\$1,932.0 million	\$1,194.1 million	\$3,126.1 million
Employment	30,122	31,482	61,604

Source: UWMCED I-O analysis

**Table 11:**  
**Economic Impact of Aurora Expenditures: Metro Milwaukee**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Metro Milwaukee</b>
Revenues/Output	\$2,647.51 million	\$2,706.52 million	\$5,354.03 million
Earnings	\$1,349.29 million	\$851.18 million	\$2,200.47 million
Employment	19,779	21,383	41,162

Source: UWMCED I-O analysis

**Table 12:****Aurora Impact By Sectors: State of Wisconsin****Total Impact of Aurora on Output/Revenues: Top 10 Sectors**  
(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$4509.87
Real Estate and Rental/Leasing	\$598.54
Manufacturing	\$551.49
Finance and Insurance	\$482.30
Retail Trade	\$303.34
Wholesale Trade	\$212.22
Professional, Scientific, and Technical Services	\$179.45
Administrative and Waste Management Services	\$175.44
Information	\$152.33
Management of Companies and Enterprises	\$136.76

**Total Impact of Aurora on Earnings: Top 10 Sectors:**  
(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$2166.10
Finance and Insurance	\$112.44
Retail Trade	\$108.79
Manufacturing	\$107.43
Professional, Scientific, and Technical Services	\$92.06
Administrative and Waste Management Services	\$80.85
Wholesale Trade	\$68.76
Management of companies and enterprises	\$63.79
Food Services, Drinking Places, Accommodation	\$48.75
Transportation and Warehousing	\$47.80

**Total Impact of Aurora on Employment: Top 10 Sectors**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	34,892
Retail Trade	4,056
Administrative and Waste Management Services	3,230
Real Estate and Rental/Leasing	3,060
Food Services, Drinking Places, Accommodation	2,400
Finance and Insurance	2,144
Other Services	1,990
Manufacturing	1,792
Professional Scientific, and Technical Services	1,558
Wholesale Trade	1,028

**Table 13:**  
**Aurora Impact By Sectors: Metro Milwaukee**

**Total Impact of Aurora on Output/Revenues: Top 10 Sectors**  
(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$2965.39
Real Estate and Rental/Leasing	\$433.93
Finance and Insurance	\$374.23
Manufacturing	\$323.65
Retail Trade	\$182.11
Professional, Scientific, and Technical services	\$149.39
Wholesale Trade	\$142.56
Administrative and Waste Management Services	\$129.45
Information	\$105.65
Food Services, Drinking Places, Accommodation	\$99.76

**Total Impact of Aurora on Earnings: Top 10 Sectors:**  
(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$1498.19
Finance and Insurance	\$94.38
Professional, Scientific, and Technical services	\$84.00
Retail Trade	\$68.30
Manufacturing	\$66.56
Administrative and Waste Management Services	\$64.06
Other Services	\$51.85
Wholesale Trade	\$48.15
Management of Companies and Enterprises	\$45.57
Transportation and Warehousing	\$35.47

**Total Impact of Aurora on Employment: Top 10 Sectors**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	22,911
Real Estate and Rental/Leasing	2,492
Administrative and Waste Management Services	2,419
Retail Trade	2,401
Finance and Insurance	1,837
Food Services, Drinking Places, Accommodation	1,722
Professional Scientific, and Technical services	1,341
Other Services	1,327
Manufacturing	1,043
Transportation and Warehousing	726



Tables 14-18 present the output, earnings, and employment impacts of Aurora Health Care in 14 counties in the Aurora" footprint." Unsurprisingly, the biggest impacts are in the largest counties with the most diversified industrial mix: Milwaukee, Waukesha, Brown, and Sheboygan. These are also counties where Aurora maintains its most extensive operations. Milwaukee County, where Aurora is headquartered, represents, by far, the county in which Aurora has its most extensive operations and biggest economic impact: 28,044 jobs (45 percent of the statewide employment impact of Aurora); \$1.55 billion in earnings (almost 50 percent of the statewide impact); and \$3.59 billion in revenues/output (44 percent of the statewide impact). It is small wonder, then, that as Table 17 shows, ***Aurora's impact accounts for 6.3 percent of employment and 7.3 percent of payroll in Milwaukee County.***

**Table 14:**  
**Aurora Impact on Business Output/Revenues: By County**

(in millions of dollars)

County	Direct Effect	Indirect/Induced	Total Impact in County
Brown	\$362.57	\$255.75	\$618.32
Door	\$6.09	\$1.10	\$7.19
Fond du Lac	\$24.47	\$12.44	\$36.91
Kenosha	\$162.43	\$88.65	\$251.08
Manitowoc	\$101.47	\$39.54	\$141.00
Marinette	\$32.60	\$7.32	\$39.92
Milwaukee	\$2072.74	\$1520.63	\$3593.37
Ozaukee	\$168.04	\$89.91	\$257.85
Racine	\$170.22	\$78.42	\$248.64
Sheboygan	\$226.33	\$115.54	\$341.87
Walworth	\$110.59	\$46.76	\$157.34
Washington	\$107.63	\$49.54	\$157.17
Waukesha	\$317.10	\$223.22	\$540.32
Winnebago	\$157.26	\$68.96	226.22

Source: UWMCED I-O analysis

**Table 15:**  
**Aurora Impact on Earnings: By County**

(Salaries and wages, in millions of dollars)

<b>County</b>	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact in County</b>
Brown	\$124.57	\$55.31	\$179.88
Door	\$3.94	\$0.72	\$4.66
Fond du Lac	\$10.48	\$3.00	\$13.48
Kenosha	\$70.01	\$23.50	\$93.51
Manitowoc	\$45.13	\$10.75	\$55.88
Marinette	\$15.59	\$2.96	\$18.55
Milwaukee	\$1048.74	\$505.16	\$1553.90
Ozaukee	\$63.11	\$18.92	\$82.03
Racine	\$88.04	\$24.81	\$112.85
Sheboygan	\$106.99	\$31.86	\$138.85
Walworth	\$49.04	\$13.17	\$62.21
Washington	\$66.82	\$19.27	\$86.09
Waukesha	\$165.52	\$59.82	\$225.34
Winnebago	\$68.82	\$17.12	\$85.94

Source: UWMCED I-O analysis

**Table 16:**  
**Aurora Impact on Employment: By County**

(Number of jobs)

<b>County</b>	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact in County</b>
Brown	2,251	1,630	3,881
Door	78	23	101
Fond du Lac	176	101	277
Kenosha	1,330	787	2,117
Manitowoc	810	339	1,149
Marinette	201	79	280
Milwaukee	14,957	13,087	28,044
Ozaukee	1,327	656	1,983
Racine	1,366	716	2,082
Sheboygan	1,728	902	2,630
Walworth	1,049	565	1,614
Washington	1,139	576	1,715
Waukesha	2,356	1,532	3,888
Winnebago	1,335	572	1,907

Source: UWMCED I-O analysis

**Table 17:**  
**Aurora's Total Impacts as a Share of Total Employment**  
**and Payroll in Counties: 2011**

<b>County</b>	<b>Employment Share %</b>	<b>Payroll Share %</b>
Brown	2.9	3.2
Fond du Lac	0.7	1.0
Kenosha	4.5	5.8
Manitowoc	3.8	5.0
Marinette	1.7	3.2
Milwaukee	6.3	7.3
Ozaukee	6.0	6.2
Racine	3.1	3.5
Sheboygan	5.3	7.4
Walworth	4.9	5.7
Washington	3.9	5.2
Waukesha	1.9	2.3
Winnebago	2.2	2.3
Metro Milwaukee	5.5	6.3
State of Wisconsin	2.6	3.3

Source: UWMCED I-O analysis, and U.S. Bureau of Census, County Business Patterns

**Table 18:**  
**Aurora's Share of Employment and Payroll in Hospitals and Ambulatory**  
**Facilities: By County, 2011**

<b>County</b>	<b>Employment Share %</b>	<b>Payroll Share %</b>
Brown	18.8	16.5
Fond du Lac	5.3	5.7
Kenosha	26.2	25.6
Manitowoc	31.9	34.7
Marinette	13.5	18.7
Milwaukee	27.2	34.8
Ozaukee	42.1	34.0
Racine	22.3	26.2
Sheboygan	47.2	57.7
Walworth	64.6	53.3
Washington	40.9	49.2
Waukesha	14.9	19.2

Source: U.S. Bureau of the Census, County Business Patterns, 2011

But this substantial county-wide impact is not limited to Milwaukee County: in seven counties, Aurora's impact generates over 5 percent of county-wide payroll, and in five counties, Aurora's impact accounts for over 4 percent of county-wide employment (see Table 17). By any reckoning, these data speak to a substantial Aurora impact on earnings and employment across a wide swath of Wisconsin counties, as do the data in Table 18, which confirm the extent to which Aurora is a central institution in the burgeoning health care sectors of counties throughout eastern Wisconsin.

Tables 19-31 break down, by county, the impact of Aurora on earnings, employment, and output in major sectors of each county's economy. Unsurprisingly, as we saw earlier when presenting this data for the entire state and for metro Milwaukee, the biggest sectoral impact of Aurora's operations in the counties is naturally in health care and social assistance. But as these tables reveal, Aurora's operations generate earnings, employment, and output across a large number of sectors in the counties in the "footprint," with variations flowing from each county's differing inter-industry linkages, and, consequently, varying multipliers for hospitals and ambulatory facilities.

**Table 19:****Economic Impact of Aurora Expenditures: Brown County**

	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact: Brown County</b>
Revenues/Output	\$362.6 million	\$255.8 million	\$618.3 million
Earnings	\$124.6 million	\$55.3 million	\$179.9 million
Employment	2,251	1,630	3,881

**Aurora Impact By Sectors: Brown County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$394.85
Real Estate and Rental/Leasing	\$38.25
Finance and Insurance	\$31.56
Manufacturing	\$23.38
Retail Trade	\$19.89

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$136.96
Retail Trade	\$4.98
Finance and Insurance	\$4.98
Professional, Scientific, and Technical Services	\$4.94
Administrative and Waste Management services	\$4.07

**Top 5 Sectors: Total Impact of Aurora on Employment**

(number of jobs)

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	2,502
Retail Trade	212
Administrative and Waste Management services	187
Food Services, Drinking Places, Accommodation	174
Real Estate and Rental/Leasing	127

**Table 20:**

**Economic Impact of Aurora Expenditures: Fond du Lac County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Fond du Lac County</b>
Revenues/Output	\$24.5 million	\$12.4 million	\$36.9 million
Earnings	\$10.5 million	\$3.0 million	\$13.5 million
Employment	176	101	277

**Aurora Impact By Sectors: Fond du Lac County**

**Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$26.59
Real Estate and Rental/Leasing	\$1.82
Finance and Insurance	\$1.67
Retail Trade	\$1.44
Manufacturing	\$0.77

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$11.55
Retail Trade	\$0.41
Finance and Insurance	\$0.29
Administrative and Waste Management Services	\$0.21
Food Services, Drinking Places, and Accommodation	\$0.17

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	190
Retail Trade	18
Food Services, Drinking Places, Accommodation	12
Administrative and Waste Management Services	10
Other Services	6

**Table 21:****Economic Impact of Aurora Expenditures: Kenosha County**

	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact: Kenosha County</b>
Revenues/Output	\$162.4 million	\$88.7 million	\$251.1 million
Earnings	\$70.0 million	\$23.5 million	\$93.5 million
Employment	1,330	787	2,117

**Aurora Impact By Sectors: Kenosha County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$174.06
Real Estate and Rental/Leasing	\$17.34
Manufacturing	\$8.62
Retail Trade	\$8.60
Wholesale trade	\$6.06

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$74.71
Retail Trade	\$2.67
Management of Companies and Enterprises	\$2.21
Administrative and Waste Management Services	\$2.12
Professional, Scientific, and Technical Services	\$1.77

**Top 5 Sectors: Total Impact of Aurora on Employment**

(number of jobs)

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,459
Retail Trade	117
Administrative and Waste Management Services	100
Food Services, Drinking Places, Accommodation	94
Real Estate and Rental/Leasing	81

**Table 22:**

**Economic Impact of Aurora Expenditures: Manitowoc County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Manitowoc County</b>
Revenues/Output	\$101.5 million	\$39.5 million	\$141.0 million
Earnings	\$45.1 million	\$10.8 million	\$55.9 million
Employment	810	339	1,149

**Aurora Impact By Sectors: Manitowoc County**

**Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$108.35
Real Estate and Rental/Leasing	\$7.33
Retail Trade	\$4.19
Manufacturing	\$3.77
Finance and Insurance	\$2.43

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$46.38
Retail Trade	\$1.34
Administrative and Waste Management Services	\$0.66
Manufacturing	\$0.61
Management of companies and enterprises	\$0.58

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	849
Retail Trade	58
Food Services, Drinking Places, Accommodation	31
Administrative and Waste Management Services	30
Real Estate and Rental/Leasing	20



**Table 23:****Economic Impact of Aurora Expenditures: Marinette County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Marinette County</b>
Revenues/Output	\$32.6 million	\$7.3 million	\$39.9 million
Earnings	\$15.6 million	\$3.0 million	\$18.6 million
Employment	201	79	280

**Aurora Impact By Sectors: Marinette County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$34.10
Real Estate and Rental/Leasing	\$1.19
Retail Trade	\$0.92
Finance and Insurance	\$0.76
Food services, Drinking Places, and Accommodation	\$0.53

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$16.09
Retail Trade	\$0.46
Food Services, Drinking Places, and Accommodation	\$0.26
Finance and Insurance	\$0.19
Transportation and Warehousing	\$0.17

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	212
Retail Trade	16
Food Services, Drinking Places, Accommodation	12
Administrative and Waste Management Services	5
Transportation and Warehousing	4

**Table 24:****Economic Impact of Aurora Expenditures: Milwaukee County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Milwaukee County</b>
Revenues/Output	\$2,072.7 million	\$1,520.6 million	\$3,593.4 million
Earnings	\$1,048.7 million	\$505.2 million	\$1,553.9 million
Employment	14,957	13,087	28,044

**Aurora Impact By Sectors: Milwaukee County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$2241.19
Real Estate and Rental/Leasing	\$303.85
Finance and Insurance	\$241.67
Manufacturing	\$141.31
Professional, Scientific, and Technical Services	\$100.34

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$1173.94
Professional, Scientific, and Technical services	\$59.14
Finance and Insurance	\$53.74
Administrative and Waste Management Services	\$45.80
Retail Trade	\$28.13

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	16,772
Real Estate and Rental/Leasing	2,315
Administrative and Waste Management Services	1,837
Finance and Insurance	1,144
Food Services, Drinking Places, Accommodation	1,110

**Table 25:****Economic Impact of Aurora Expenditures: Ozaukee County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Ozaukee County</b>
Revenues/Output	\$168.0 million	\$89.9 million	\$257.9 million
Earnings	\$63.1 million	\$18.9 million	\$82.0 million
Employment	1,327	656	1,983

**Aurora Impact By Sectors: Ozaukee County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$178.37
Real Estate and Rental/Leasing	\$17.82
Finance and Insurance	\$14.36
Manufacturing	\$9.31
Wholesale Trade	\$5.70

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$66.76
Finance and Insurance	\$2.35
Professional, Scientific, and Technical Services	\$1.82
Administrative and Waste Management Services	\$1.51
Management of Companies	\$1.37

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,286
Retail Trade	89
Real Estate and Rental/Leasing	84
Administrative and Waste Management Services	75
Finance and Insurance	65

**Table 26:****Economic Impact of Aurora Expenditures: Racine County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Racine County</b>
Revenues/Output	\$170.2 million	\$78.4 million	\$248.6 million
Earnings	\$88.0 million	\$24.8 million	\$112.8 million
Employment	1,366	716	2,082

**Aurora Impact By Sectors: Racine County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$181.41
Real Estate and Rental/Leasing	\$13.84
Finance and Insurance	\$8.39
Retail Trade	\$8.19
Manufacturing	\$6.92

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$93.61
Retail Trade	\$3.20
Administrative and Waste Management Services	\$3.02
Professional, Scientific, and Technical Services	\$1.91
Finance and Insurance	\$1.71

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,472
Retail Trade	119
Food Services, Drinking Places, Accommodation	79
Real Estate and Rental/Leasing	70
Other Services	51

**Table 27:****Economic Impact of Aurora Expenditures: Sheboygan County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Sheboygan County</b>
Revenues/Output	\$226.3 million	\$115.5 million	\$341.9 million
Earnings	\$107.0 million	\$31.9 million	\$138.9 million
Employment	1,728	902	2,630

**Aurora Impact By Sectors: Sheboygan County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$242.05
Real Estate and Rental/Leasing	\$16.33
Finance and Insurance	\$15.97
Retail Trade	\$12.91
Manufacturing	\$10.86

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$108.94
Retail Trade	\$4.20
Finance and Insurance	\$2.88
Administrative and Waste Management Services	\$2.17
Wholesale Trade	\$1.82

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,950
Retail Trade	182
Food Services, Drinking Places, Accommodation	120
Administrative and Waste Management Services	97
Manufacturing	35

**Table 28:****Economic Impact of Aurora Expenditures: Walworth County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Walworth County</b>
Revenues/Output	\$110.6 million	\$46.8 million	\$157.3 million
Earnings	\$49.0 million	\$13.2 million	\$62.2 million
Employment	1,049	565	1,614

**Aurora Impact By Sectors: Walworth County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$115.32
Real Estate and Rental/Leasing	\$9.76
Retail Trade	\$5.27
Finance and Insurance	\$3.93
Administrative and Waste Management Services	\$3.24

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$50.95
Retail Trade	\$1.82
Administrative and Waste Management Services	\$1.61
Professional, Scientific, and Technical Services	\$0.87
Wholesale Trade	\$0.86

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,103
Retail Trade	91
Administrative and Waste Management Services	85
Food Services, Drinking Places, Accommodation	77
Real Estate and Rental/Leasing	61

**Table 29:****Economic Impact of Aurora Expenditures: Washington County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Washington County</b>
Revenues/Output	\$107.6 million	\$49.6 million	\$157.2 million
Earnings	\$66.8 million	\$19.3 million	\$86.1 million
Employment	1,139	576	1,715

**Aurora Impact By Sectors: Washington County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$113.68
Finance and Insurance	\$7.56
Real Estate and Rental/Leasing	\$7.00
Retail Trade	\$4.96
Manufacturing	\$4.38

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$72.23
Finance and Insurance	\$2.23
Retail Trade	\$2.23
Administrative and Waste Management Services	\$1.67
Other Services	\$1.59

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,286
Retail Trade	97
Food Services, Drinking Places, Accommodation	83
Administrative and Waste Management Services	75
Other Services	50

**Table 30:****Economic Impact of Aurora Expenditures: Waukesha County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Waukesha County</b>
Revenues/Output	\$317.1 million	\$223.2 million	\$540.3 million
Earnings	\$165.5 million	\$59.8 million	\$225.3 million
Employment	2,356	1,532	3,888

**Aurora Impact By Sectors: Waukesha County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$339.82
Real Estate and Rental/Leasing	\$34.95
Finance and Insurance	\$34.76
Manufacturing	\$21.27
Professional, Scientific, and Technical Services	\$18.67

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$177.22
Professional, Scientific, and Technical Services	\$9.37
Finance and Insurance	\$6.94
Retail Trade	\$4.87
Manufacturing	\$3.74

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	2,588
Real Estate and Rental/Leasing	210
Retail Trade	177
Administrative and Waste Management Services	167
Professional, Scientific, and Technical Services	51



**Table 31:****Economic Impact of Aurora Expenditures: Winnebago County**

	<b>Direct Effect</b>	<b>Indirect and Induced</b>	<b>Total Impact: Winnebago County</b>
Revenues/Output	\$157.3 million	\$68.9 million	\$226.2 million
Earnings	\$68.8 million	\$17.1 million	\$85.9 million
Employment	1,335	572	1,907

**Aurora Impact By Sectors: Winnebago County****Top 5 Sectors: Total Impact of Aurora on Output/Revenues**

(millions of dollars)

<b>Sector</b>	<b>Output/Revenue Impact</b>
Health Care and Social Assistance	\$167.33
Real Estate and Rental/Leasing	\$12.24
Finance and Insurance	\$9.14
Manufacturing	\$5.56
Retail Trade	\$5.29

**Top 5 Sectors: Total Impact of Aurora on Earnings**

(millions of dollars)

<b>Sector</b>	<b>Earnings</b>
Health Care and Social Assistance	\$73.55
Retail Trade	\$1.61
Administrative and Waste Management Services	\$1.43
Finance and Insurance	\$1.34
Management of Companies and Enterprises	\$1.17

**Top 5 Sectors: Total Impact of Aurora on Employment**

<b>Sector</b>	<b>Employment</b>
Health Care and Social Assistance	1,446
Retail Trade	75
Administrative and Waste Management Services	72
Food Services, Drinking Places, Accommodation	56
Real Estate and Rental/Leasing	45

Finally, Tables 32-34 provide a separate breakdown of the total economic impact of Aurora hospitals, in the counties and metro areas in which Aurora's hospitals are located. As is readily apparent from the tables, Milwaukee-area hospitals generate the greatest economic impact of hospitals in the Aurora system. The economic ripple effects from Aurora St. Luke's alone, for example, produce almost 11,000 jobs in metro Milwaukee (more than any single employment site in the region), and St. Luke's accounts for over one-third of the combined impact of Aurora hospitals across the eastern Wisconsin "footprint" on regional output, employment, and earnings. Nevertheless, as the data in Tables 32-34 make clear, Aurora hospitals in each county account for significant economic impacts. Nine of the 15 hospitals in the Aurora system generate a total employment impact of more than 1,000 jobs in their respective counties or metro areas, while four others account for more than 750 jobs each – these are vital contributions to the economic well-being of these communities. In total, the jobs impact of Aurora hospitals accounts for 2.8 percent of all employment in metro Milwaukee, while in counties such as Manitowoc, Brown, Sheboygan, Racine, Kenosha, and Walworth –when all direct, indirect, and induced effects are calculated—Aurora hospitals generate between 1.4 and 2.5 percent of total employment in the county, a substantial amount for a single employment site.

**Table 32:**  
**Economic Impact of Aurora Hospitals: Output/Revenues**  
(millions of dollars)

<b>Hospital</b>	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact in County/Metro*</b>
Aurora St. Luke's MC	726.05	761.77	1487.82
South Shore	67.60	70.93	138.53
Aurora Sinai MC	197.56	207.28	404.84
Aurora Psychiatric	20.55	21.56	42.11
Aurora West Allis MC	185.22	194.33	379.55
AMC Sheboygan County	83.57	42.33	125.90
AMC Washington County	42.85	45.70	87.80
AMC Summit	86.24	90.46	176.70
AMC Grafton	101.36	106.34	207.70
Aurora Lakeland MC	63.96	27.11	91.07
Aurora Manitowoc County	47.48	18.84	66.32
Aurora MH Burlington	61.56	27.41	88.97
Aurora MC Kenosha	95.02	55.98	151.00
Aurora BayCare MC	190.25	134.35	324.60
Aurora MC Oshkosh	77.94	34.37	112.31

\*metro area impact calculated for Milwaukee-area hospitals

**Table 33:**  
**Economic Impact of Aurora Hospitals: Earnings**  
(millions of dollars)

<b>County</b>	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact in County/Metro*</b>
Aurora St. Luke's MC	228.12	169.53	397.65
South Shore	23.46	17.44	40.90
Aurora Sinai MC	67.46	50.13	117.59
Aurora Psychiatric	10.91	8.11	19.02
Aurora West Allis MC	60.79	45.18	105.97
AMC Sheboygan County	27.98	9.85	37.83
AMC Washington County	18.64	13.85	32.49
AMC Summit	30.38	22.57	52.95
AMC Grafton	38.23	28.41	66.64
Aurora Lakeland MC	22.42	6.67	29.09
Aurora Manitowoc County	16.34	4.61	20.95
Aurora MH Burlington	25.02	8.44	33.46
Aurora MC Kenosha	32.25	12.11	44.36
Aurora BayCare MC	63.53	32.17	95.70
Aurora MC Oshkosh	25.50	7.62	33.12

\*metro area impact calculated for Milwaukee-area hospitals

**Table 34:**  
**Economic Impact of Aurora Hospitals: Employment**  
(number of jobs)

<b>Hospital</b>	<b>Direct Effect</b>	<b>Indirect/Induced</b>	<b>Total Impact in County/Metro *</b>
Aurora St. Luke's MC	5,284	5,700	10,984
South Shore	565	610	1,175
Aurora Sinai MC	1,337	1,442	2,779
Aurora Psychiatric	275	297	572
Aurora West Allis MC	1,375	1,483	2,858
AMC Sheboygan County	718	361	1,079
AMC Washington County	382	412	794
AMC Summit	631	681	1,312
AMC Grafton	741	799	1,540
Aurora Lakeland MC	504	263	767
Aurora Manitowoc County	386	158	544
Aurora MH Burlington	603	326	929
Aurora MC Kenosha	704	400	1,104
Aurora BayCare MC	1,398	1,008	2,406
Aurora MC Oshkosh	615	262	877

\*metro area impact calculated for Milwaukee-area hospitals

## Section IV:

### **Aurora's Contributions to Wisconsin's "Export Base"**

As we noted earlier in this study, another way in which some health care providers – especially large, highly specialized and nationally renowned hospitals—drive economic development in their communities is by attracting patients from outside their regions, who bring “new money” into the regional economy. In terms of local economic development, this infusion of outside dollars is conceptually the same as when an exporter of goods –a medical instrument manufacturer or a software producer, for example—earns income by selling their products outside the region, and brings those export earnings back into the community. The Mayo Clinic in Rochester, Minnesota, of course, is a classic example of an “export base” medical complex driving local economic development (health care accounts for 37 percent of regional GDP in Rochester), but researchers are increasingly identifying cases of hospitals increasingly playing this economic role in communities across the country. A recent study, for example, found that Medicare revenue generated from out-of-region patients (“Medicare exports”) accounted for 63 percent of Medicare revenues at the University of Alabama Hospital in Birmingham, 57 percent at the Cleveland Clinic, and 38 percent at the University of Pittsburgh Medical Center.<sup>10</sup>

Thus, to the extent that its services are funded by dollars from outside the local economy, hospitals can be viewed as part of a region's export base. Although Aurora hospitals do not attract the level of outside dollars of the institutions noted above – in that sense, Aurora is more properly characterized as a local-serving rather than export-oriented system of hospitals-- Aurora does draw funds into Wisconsin from federal research grants, out-of-state patient revenues, and concomitant local spending by the families of non-resident patients. In 2011, for example, Aurora attracted \$6.3 million in non-Wisconsin funding for research, community health initiatives, and clinical trials.

Approximately 1.2 percent of patients at Aurora system hospitals in 2011 were from outside Wisconsin, with an additional 0.6 percent from Wisconsin but outside the Aurora footprint. The residential origin of inpatient and outpatient cases reveals a similar breakdown. Although we don't have Aurora's patient revenue data broken down by the home residence of patients, a reasonable –and conservative—assumption is that the geographic breakdown in the origins of patient revenues is at least comparable to the geographic distribution of patients. Using that assumption, we estimate that \$49,140,000 in out-of-state patient revenues was brought into Wisconsin by Aurora patients; our estimate, based on the multipliers in our input-output model, is that these revenues generated \$34,099,950 in earnings in the state, and 900 jobs.

Over 5,000 patients from outside Wisconsin were treated at Aurora hospitals on an inpatient basis in 2011; another 6,677 from outside the state were treated as outpatients. Using conservative assumptions on length of stay in Wisconsin (4 days for inpatients, 2 days for outpatients) and conservative assumptions on per-day

visitor spending (\$100 a day), we estimate that patients' families spent \$3,341,000 in Wisconsin, generating \$2,320,324 in earnings in the state, and 58 jobs.

## **Section V**

### **Community Benefits Activities and Economic Development**

Hospitals in the U.S. are increasingly embracing the role of “anchor institutions” in their communities. As Howard and Alperovitz note:

A growing number of hospitals are beginning to design and implement comprehensive anchor strategies in which they leverage the business side of their organization (through their procurement policies, for instance) to benefit the local economy. Many institutions are strengthening their community engagement and economic development efforts. Some are rebuilding strained connections with alienated local residents. Others are adopting interventions focused on addressing social determinants of health, such as housing conditions, employment opportunities, environmental exposures, and asset preservation.<sup>11</sup>

In short, the “community engagement” activities of hospitals are increasingly important in boosting the contribution of hospitals to local economic development and community well-being. Aurora has an active and developing community benefits and community building program. In 2011, Aurora spent \$35.7 million on community benefits activities, including free and subsidized clinics, community health education and outreach, health screenings and immunizations, community health research, workforce development and neighborhood support, and health professional education. In addition, Aurora spent \$338.6 million in uncompensated care (including charity care, Medicaid losses, and other uncompensated care) in 2011.

Aurora's community benefits program highlights the following priorities:

- Engaging community input and support
- Focusing on access to health care services to persons with unmet health needs
- Addressing the underlying causes of persistent health problems
- Using research and data to identify community health needs and guide action
- Building links between Aurora's clinical services and community health-improvement activities
- Strategically deploying Aurora's resources to build the capacity of existing community assets to promote community well-being and improved health outcomes

Much more can be done to build a muscular “anchor institution” strategy at Aurora – including robust procurement and supplier linkage policies focused especially on underserved populations and communities.<sup>12</sup> But the evidence suggests a clear commitment at Aurora to community engagement and an impressive track record in allocating resources to community benefits activities. These all represent an important element of the impact of Aurora as an economic institution.

Finally, although this is not a “community benefits” contribution per se, it should be noted that Aurora operates Milwaukee’s major inner city hospital at the Aurora Sinai Medical Center. As the only hospital operating in the inner city, Aurora Sinai is in the unique position of providing accessible care for the individuals residing in surrounding community, where neighborhood poverty rates exceed 40 percent and non-employment rates approach 50 percent. Since 1977, nine hospitals have closed in the city of Milwaukee, increasing the importance of Aurora Sinai for the city’s most vulnerable populations. The operation of Aurora Sinai, with all the financial challenges that entails, constitutes an important, ongoing commitment of Aurora to health care in the city of Milwaukee and a major contribution to the city’s economy.

## **Summary and Conclusions**

Aurora Health Care has a substantial economic impact on the state of Wisconsin and in the individual communities in which it operates. Aurora is the largest private-sector employer in the state, employing about 30,200 people directly; and when the multiplier effect is taken into account, Aurora generates over 61,000 jobs in Wisconsin. An estimated \$8.2 billion of economic activity in Wisconsin is attributable to Aurora’s operations, as are \$3.1 billion of earnings.

Two-thirds of Aurora’s economic impact is felt in metro Milwaukee, the urban hub of the state, with over 41,000 jobs in the region directly or indirectly attributable to Aurora’s operations. Aurora is an especially important economic institution in the city of Milwaukee, where it directly provides almost 10,000 jobs. Aurora is also almost certainly the largest employer of members of minority communities in the state of Wisconsin.

Aurora’s economic impact is substantial in every county in which its hospitals, clinics, and other ambulatory facilities operate. On average, Aurora’s activities generate about 4.5 percent of all payroll and 3.6 of all employment in counties in the eastern Wisconsin Aurora footprint.

## Appendix

### Notes on Methodology and Data

This study has employed the standard methodology used by researchers to assess the economic impact of health care institutions on communities.<sup>13</sup> As described in Section II of this report, we used an input-output model to measure how much secondary business activity, earnings, and employment (“indirect and induced effects”) result from initial direct expenditures by Aurora. These ripple effects, measured by industry multipliers and based on a model of inter-industry linkages in a given economy, represent the degree to which the recirculation of money from initial expenditures generates additional economic impacts. Aggregating all these “rounds” of spending yields a measure of total economic impact. To maintain comparability with other hospital and health care institution impact studies, this study reports the gross impact of Aurora’s operations; we have not analyzed, for example, factors such as the effects on local businesses and households of rising health care costs that “net out” some of the impact of Aurora’s expenditures. Nor have we quantified the full “leakage” from gross revenues and output. That would require a much more elaborate research endeavor than was feasible in this study and, to our knowledge, there are no comparable hospital/health care economic impact studies for a state or city that have conducted such an analysis.

We have provided numerous “benchmark” indicators to place Aurora’s economic impact in some context. The study provides estimates on Aurora-generated employment as a share of total employment in various jurisdictions, and Aurora-generated earnings as a share total payroll in Wisconsin, Metro Milwaukee, and individual counties. Another way to benchmark Aurora’s impact would be to specify the share of state or metro area GDP accounted for by Aurora’s activities. Impact studies sometimes benchmark “gross output” as a share of total GDP as a measure of the impact of an industry or business in a state or region, but, for technical reasons this is problematic (total gross output is a duplicated measure, counting goods and services multiple times if they are used in the production of other goods and services. GDP is an “unduplicated” total, a measure of final demand expenditures). As an analysis of the use of input-output models and multipliers puts it: “To compare the impact results to regional measures of GDP, a value added multiplier needs to be used. Both value added and GDP exclude the impact of spending on intermediate inputs.”<sup>14</sup>

The value added impact, therefore, will be a lower figure than the total output or revenue impact. For the state of Wisconsin, we calculate the value added impact of Aurora’s operations in 2011 at \$4.83 billion (about 1.9 percent of state GDP) and at \$3.24 billion in metro Milwaukee (approximately 3.7 percent of the region’s GDP).

This study used the RIMS II input-output model and industry multipliers (for hospitals and ambulatory facilities) developed by the U.S. Department of Commerce's Bureau of Economic Analysis. The RIMS II model was contoured for the multiple "regions" analyzed in this report: the state of Wisconsin; the four-county Milwaukee metropolitan area; and the 14 individual counties in which Aurora hospitals and ambulatory facilities operate (Brown, Door, Fond du Lac, Kenosha, Manitowoc, Marinette, Milwaukee, Ozaukee, Racine, Sheboygan, Walworth, Washington, Waukesha, and Winnebago).

Aurora Health Care provided UWMCED researchers raw data on direct expenditures, payroll, and employment by individual Aurora facilities (and, in the case of employment and salaries/wages, place of residence), and these data were then aggregated into appropriate analytic categories by UWMCED, and run through the input-output model to derive economic impact measures for various counties and regions. In addition, these data were further amplified by census and other economic information, to provide comparative, benchmark, and contextual calculations.



## Endnotes

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<sup>1</sup> See “Aurora Health Care at a Glance.” Accessed at:

<http://www.aurorahealthcare.org/aboutus/news-media-center/our-organization.aspx>

<sup>2</sup> The effects of quality health care services on local productivity are widely recognized as an important, though difficult to quantify, part of the impact of health care institutions. However, it is beyond the scope of this study to model that impact for Wisconsin or individual counties, and to specify Aurora’s particular contribution in that area. This study focuses on the impact of Aurora Health Care as an *economic* institution in Wisconsin and local economies.

<sup>3</sup> See T.J. Bartik and G. Erickcek, *Higher education, the health care industry, and metropolitan regional economic development: What can “eds and meds” do for the economic fortunes of a metro area’s residents?* Working Paper No. 08-140. (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2007).

<sup>4</sup> For a good overview, see David Zuckerman, *Hospitals Building Healthier Communities: Embracing the anchor mission* (College, Park, MD: March 2013).

<sup>5</sup> Ira Harkavy and Harlan Zuckerman, *Eds and Meds: Cities’ Hidden Assets* (Washington, D.C.: The Brookings Institution, 1999); Guian McKee, *Health-Care Policy as Urban Policy: Hospitals and Community Development in the Post-Industrial City* (Charlottesville, VA: Center for Community Development Investments, December 2010); and Laura Wolf-Powers and Marla Nelson, “Chains and Ladders: Exploring the Opportunities for Workforce Development and Poverty Reduction in the Hospital Sector,” *Economic Development Quarterly*, 24:1 (January 2010): 33-44.

<sup>6</sup> See Marla Nelson, “Are Hospitals an Export Industry? Empirical Evidence from Five Lagging Regions,” *Economic Development Quarterly*, 23:3 (August 2009): 242-253; and Ross C. DeVol and Rob Koeppe, *America’s Health Care Economy* (Los Angeles: The Milken Institute, 2003).

<sup>7</sup> See among others, Wolf-Powers and Nelson, op. cit; and Joan Fitzgerald, *Moving Up in the New Economy: Career Ladders for U.S. Workers* (Ithaca, N.Y.: Cornell University Press, 2006).

<sup>8</sup> This conclusion is qualified with “almost” certainly because we do not have full data on the racial composition of the workforce of large federal employers in Wisconsin (such as the U.S. Postal Service) or for each agency of state government. But it is highly unlikely that any of these entities employ more minorities than Aurora. For example, over 35 percent of USPS employees would have to be minorities (including over 20 percent African American) for its total to exceed Aurora’s, percentages that are not plausible. Similarly, although EEOC data reveal that there are over 5,300 African Americans employed by “state and local government” in Wisconsin, we know that over 3,400 of those individuals were employed by the City of Milwaukee and MPS; thus, it is not arithmetically plausible that any other single state or local agency employed more minorities than Aurora. And, given the size and location of other private-sector employers in Wisconsin, there is no likelihood that any employ a higher number of minorities than does Aurora.

<sup>9</sup> The degree to which these inter-industry linkages and spending “leakages” vary by the size and complexity of a jurisdiction can be seen clearly in this hierarchy of employment multipliers for the hospital industry: Metro Milwaukee, 2.08; Milwaukee County, 1.87; Brown County, 1.72; Walworth County, 1.52; Manitowoc County, 1.41; and Marinette County, 1.31.

<sup>10</sup> Nelson, “Are Hospitals an Export Industry?”: 248.

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<sup>11</sup> Ted Howard and Gar Alperovitz, "Preface," in Zuckerman, *Hospitals Building Healthier Communities: Embracing the anchor mission*

<sup>12</sup> Zuckerman, op. cit, notes that although hospital procurement from diversity suppliers nationally remains less than one percent, there are model programs at major medical centers such as M.D. Anderson in Houston in which nearly 15% of procurement is through "historically underutilized businesses." Aurora's "HUB" procurement is slightly below the national average.

<sup>13</sup> See for example: University of Cincinnati Economics Center for Education and Research, "The Economic Impact of Cincinnati Children's Hospital Medical Center on Greater Cincinnati," (June 2008); William Beyers, "The Economic Impact of Hospitals in Washington State in the Year 2001," (July 2003); and Metropolitan Chicago Healthcare Council, "The Economic Impact of Chicago's Hospitals on the Metropolitan Chicago Area," (2004).

<sup>14</sup> Rebecca Bess and Zoe Ambargis, "Input-Output Models for Impact Analysis: Suggestions for Practitioners Using RIMS II Multipliers," Paper presented at Southern Regional Science Association Conference, March 23-27, 2011, p. 14.